these values are questionable; however, since only storms that were considered to be representative were chosen for special observation, it is believed that the values are reasonably approximate.

Following are detailed tables of all thunderstorms that have been recorded at the Lander station for the 20-year period 1906–1925, inclusive.

TABLE 1.—*Diurnal and annual distribution of thunderstorms Lander, Wyo.*

	A. M.												P. M.												Total
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
January																									None.
February																									None.
March																			1						1
April													2	2	2	1	3	1	1		1			1	14
May					2	1	1		1	1			1	8	5	10	3	4	3	5	1	2			1	49
June		1		1			3				2	3	4	14	15	10	10	14	4	8	5	3	3	1	1	102
July		1		1					1	3	3	3	10	10	7	13	7	8	9	13	5	6	3	4	1	105
August		1		2	2	1	2	2			1	3	11	6	6	10	13	8	6	5	3	2	1	2	4	91
September			1				1		1	1		2	3	4	4	7	6	5	1	1	4	1				42
October																					1		2			3
November													1													1
December																									None.
Total	3	1	4	2	3	7	3	1	3	7	11	32	44	39	51	42	40	25	32	20	14	9	8	7	408

TABLE 2.—*Number of thunderstorms in three classes according to severity*

	January	February	March	April	May	June	July	August	September	October	November	December	Total	Per cent
Light	0	0	1	12	38	77	84	76	39	1	1	0	329	81
Moderate	0	0	0	2	7	19	18	10	3	0	0	0	59	14
Heavy	0	0	0	0	4	6	3	5	0	2	0	0	20	5
Total	0	0	1	14	49	102	105	91	42	3	1	0	408	100

TABLE 3.—*Number of thunderstorms from different directions*

	January	February	March	April	May	June	July	August	September	October	November	December	Total	Per cent
North	0	0	0	1	0	5	7	4	2	0	0	0	19	5
Northeast	0	0	0	0	2	4	4	3	3	0	1	0	17	4
East	0	0	0	2	3	2	3	2	0	0	0	0	12	3
Southeast	0	0	0	3	1	2	2	0	3	1	0	0	12	3
South	0	0	0	0	5	2	7	3	2	0	0	0	19	5
Southwest	0	0	0	6	24	52	40	36	17	2	0	0	177	43
West	0	0	0	1	5	20	25	23	4	0	0	0	78	19
Northwest	0	0	1	1	9	15	17	20	11	0	0	0	74	18
Total	0	0	1	14	49	102	105	91	42	3	1	0	408	100

TABLE 4.—*Number of thunderstorms, "dry," [1] and with precipitation*

	January	February	March	April	May	June	July	August	September	October	November	December	Total	Per cent
"Dry"	0	0	0	2	1	11	24	8	9	0	0	0	55	13
T.–0.10 inch	0	0	1	10	36	70	61	65	30	1	1	0	275	67
0.11–0.25 inch	0	0	0	2	7	12	11	14	1	1	0	0	48	12
0.26–0.50 inch	0	0	0	0	3	6	6	1	2	1	0	0	19	5
Over 0.50 inch	0	0	0	0	2	3	3	3	0	0	0	0	11	3
Total	0	0	1	14	49	102	105	91	42	3	1	0	408	100

[1] The "dry" thunderstorms listed were storms that passed directly over the station and from which no rain fell within a radius of at least 5 miles.

551.506 (73)

THE WEATHER OF 1926 [1]

A summary of weather conditions in the United States for the year 1926 shows that, for the country as a whole, no marked unusual features as affecting agricultural interests were experienced. Conditions were rather unfavorable for development of some of the major crops, but were unusually favorable for others, with the general result as to yields satisfactory. More than half the country had for the year less than normal precipitation, more than normal warmth, and a longer than normal growing season.

The winter of 1925–26 had about normal temperature in all Southern States and in central and northern districts east of the Mississippi River, but was unusually mild throughout the Northwest. No low temperature records were broken; in fact, throughout practically all of the country the lowest reached during the winter ranged from 15° to as much as 50° above the previous low record. Precipitation was below normal over the greater part of the country. The spring season was generally cool and backward in much of the South and from the middle and upper Mississippi Valley eastward, but there was considerably more than normal warmth over the Northwest and quite generally west of the Rocky Mountains. Precipitation was heavy in the Southwest, but ranged from about normal to considerably below in other sections.

The summer had approximately normal temperature over the eastern half of the country and above normal over the western half. Precipitation was unevenly distributed, most sections east of the Mississippi River having more than the normal amount. For the fall season the temperature averaged slightly above normal in the South and generally so west of the Rocky Mountains, but somewhat below normal in most of the central valley and more northern States; precipitation was mostly light in the South and heavy in northern districts.

YEAR GENERALLY WARMER THAN NORMAL

Chart I (A. J. H.) shows that the temperature for the year, as a whole, was below normal from the Mississippi River eastward, except in parts of the south Atlantic area, and generally above normal to the westward. From the Ohio Valley northward and eastward the deficiencies in temperature were large, but in the South they were small, with more than normal warmth reported in parts of the area. West of the Mississippi River, except locally in the Southwest, the year was abnormally warm, with the accumulated plus departures of temperature from normal in parts of the Northwest reaching more than 1,000°, or an average of nearly 3° a day. Approximately two-thirds of the country had a year warmer than normal.

In the Southwest and in most sections from the Mississippi Valley eastward the year had more than normal precipitation, although it was rather scanty in parts of the immediate Gulf section and over considerable sections of the Atlantic coast area, as shown by Chart II (A. J. H.). The greatest deficiencies in the East occurred in parts of New England and in Virginia and the Carolinas, where

[1] Reprinted from Weekly Weather and Crop Bulletin, Jan. 11, 1927.

some stations reported only about three-fourths of the normal annual fall. On the other hand, some upper Mississippi Valley districts had from 25 to nearly 50 per cent more than normal amount. The yearly totals were also in excess of normal in the southern border districts of the West and in most of California, but were below normal quite generally from the central and northern Great Plains westward, except in a few local areas. A little more than half the country had less than normal rainfall.

Chart III (not reproduced) shows for the year 1926 the departure from normal of the growing season, or the period between the dates of last killing frost in spring and the first in fall. It indicates that this was somewhat shorter than usual in most of the South and in Atlantic coast districts, and also in some central northern States, and locally in the far Northwest. In most of the central valleys the season of growth was somewhat longer than normal, and generally so over the West. The year had a longer than normal growing season in approximately 60 per cent of the country.

In the Atlantic States, there were 26 weeks warmer than normal, 25 cooler, and 1 exactly normal; 15 weeks with rainfall above normal, 30 below normal, and 7 just normal, with the annual precipitation 5.4 inches below normal. In the central area there were 29 warmer than normal weeks and 23 cooler than normal; 17 weeks with more than normal precipitation, 27 below normal, and 8 just normal, with the total precipitation 1.3 inches below normal. In the West, there were 35 weeks warmer and 17 cooler than normal; 15 weeks with more than normal precipitation, 29 with less than normal, and 8 just normal, with the annual amount 0.3 inch above normal.

THE YEAR'S WEATHER EFFECT ON CROPS

Wheat came through the mild winter with no material harm which, together with the subsequent favorable weather, resulted in an unusually good crop of the winter variety; likewise the general absence of damaging frost was responsible for one of the largest fruit yields in the history of the country, and the widespread favorable weather in the South gave an unprecedentedly large crop of cotton. Conditions were somewhat less favorable for corn, though the per-acre yield was only slightly below the preceding 10-year average, while heat and drought materially reduced the yield of spring wheat.

The general result of the year's weather effect on crop yields is indicated by the report of the Department of Agriculture showing the composite per-acre yield in percentage of the preceding 10-year average for the respective States. This indicates that the composite yield of all crops was below the 10-year average from the central Great Plains and lower and middle Mississippi Valley northward, slightly below in two South Atlantic States and Nevada, and generally above normal elsewhere. Of the 48 States, 34, comprising approximately two-thirds of the area of the country, had a composite yield of crops above the 10-year average.

Cloudiness.—A feature of the weather in northern districts, which also penetrated southward to include the middle Mississippi Valley, was the more than usual cloudiness. The annual average for the North Pacific Coast States, upper Mississippi Valley, upper and lower Lakes, and the Ohio Valley and Tennessee was more than 6 on a scale of 0–10.

The level of the Great Lakes in December, 1926, was higher than in the same month of 1915.

TABLE 1.—*Monthly and annual temperature departures, 1926*

District	January	February	March	April	May	June	July	August	September	October	November	December	Average monthly departure
New England	+2.1	−1.7	−3.1	−3.3	−1.7	−3.2	−1.3	−0.2	−1.2	−1.1	+1.3	−4.6	−1.5
Middle Atlantic	+0.9	+0.2	−3.4	−2.5	−0.4	−3.1	−0.1	+1.3	+0.4	−0.7	−0.5	−3.4	−0.9
South Atlantic	−0.3	+1.8	−5.2	−1.4	−0.1	−0.5	+0.4	+2.7	+3.6	+1.9	−2.3	+2.3	+0.2
Florida Peninsula	+0.2	−0.9	−2.9	+0.5	−1.0	+0.4	±0.0	+0.4	+1.4	+0.9	−0.7	+4.3	+0.2
East Gulf	−1.1	+1.8	−5.9	−2.3	−1.0	−0.3	−0.7	+1.3	+4.0	+1.8	−3.9	+4.0	−0.2
West Gulf	−1.8	+5.1	−3.9	−3.2	−0.7	−0.3	−1.4	+0.9	+3.2	+4.0	−2.0	+0.9	+0.1
Ohio Valley and Tennessee	−0.2	+2.2	−6.0	−5.0	+0.2	−2.5	+0.1	+1.4	+2.8	±0.0	−3.0	−1.0	−0.9
Lower Lakes	+1.3	−0.8	−4.9	−6.0	−2.3	−4.5	−1.2	+1.0	−0.9	−2.1	−0.2	−4.4	−2.1
Upper Lakes	+2.0	+2.4	−5.0	−4.7	−0.2	−4.1	−0.6	+0.6	−2.3	−2.6	−3.0	−4.0	−1.8
North Dakota	+12.0	+14.8	+3.6	+2.2	+4.6	−2.7	+1.8	−0.4	−4.9	−0.2	−4.1	−2.6	+2.0
Upper Mississippi Valley	+3.6	+7.2	−4.2	−4.3	+2.6	−3.4	+0.4	+1.3	−1.0	−1.0	−3.8	−2.6	−0.4
Missouri Valley	+4.3	+10.2	−0.9	−2.1	+4.6	−1.2	+1.1	+2.0	−1.7	+0.9	−3.8	−0.9	+1.0
Northern slope	+5.4	+11.0	+3.1	+2.6	+3.2	+1.2	+2.3	+0.5	−6.0	+3.1	+0.2	−1.9	+2.1
Middle slope	+2.2	+8.4	−2.4	−3.5	+2.2	+0.1	−0.5	+1.8	−0.7	+2.3	−0.6	−1.1	+0.7
Southern slope	−2.0	+6.3	−3.9	−5.2	−1.4	−0.4	−2.5	+0.8	+2.1	+3.7	−0.1	−0.5	−0.3
Southern Plateau	−1.3	+3.5	+1.8	+1.6	+0.6	+2.4	−0.4	+0.9	+2.0	+3.2	+2.6	−1.5	+1.3
Middle Plateau	+1.1	+4.9	+2.9	+5.2	+2.9	+5.3	+1.5	+1.2	−1.5	+2.7	+4.9	−0.9	+2.5
Northern Plateau	+1.3	+8.1	+3.6	+5.9	+1.4	+4.4	+4.3	+0.8	−4.7	+2.2	+3.9	−0.9	+2.5
North Pacific	+2.9	+5.8	+5.6	+6.8	+2.8	+3.7	+2.6	+1.3	±0.0	+3.6	+4.5	+0.2	+3.3
Middle Pacific	−1.2	+3.5	+5.6	+5.3	+2.7	+2.2	+2.2	+0.2	−1.5	+2.5	+4.6	−0.2	+2.2
South Pacific	+1.4	+4.6	+5.5	+5.2	+3.3	+2.0	+0.3	+0.8	−1.6	+2.0	+5.4	−0.6	+2.4
UNITED STATES	+1.6	+4.7	−1.0	−0.4	+1.0	−0.2	+0.4	+1.0	−0.4	+1.3	±0.0	−0.9	+0.6

TABLE 2.—*Monthly and annual precipitation departures, 1926*

District	January	February	March	April	May	June	July	August	September	October	November	December	Accumulated departures for the year
New England	−0.7	+0.7	−1.1	−0.7	−1.0	−0.7	−0.5	−0.4	−1.3	+1.7	+0.9	−0.5	−3.6
Middle Atlantic	±0.0	+0.5	−1.5	−1.2	−1.3	−1.4	+0.2	+1.2	−0.2	+0.1	+1.1	+0.4	−2.1
South Atlantic	+2.0	−0.6	+0.2	−1.0	−2.0	+0.5	−0.4	−2.2	−2.1	−2.1	+0.3	−1.4	−8.8
Florida Peninsula	+2.5	−1.9	−0.2	−0.7	−0.2	−2.0	+2.0	+4.4	−1.0	+0.4	−0.9	−1.5	+0.9
East Gulf	+2.7	−2.5	+0.9	−1.2	−0.2	−0.4	−0.1	+1.6	+1.1	−0.5	+1.0	+0.3	+2.7
West Gulf	+0.4	−1.7	+2.6	+0.7	+0.1	−0.8	+0.6	−0.9	−1.4	+1.0	−1.5	+2.3	+1.4
Ohio Valley and Tennessee	−0.1	−0.6	−1.3	−0.9	−1.4	−1.6	+0.3	+2.5	+1.8	+1.8	−0.4	+2.0	+2.1
Lower Lakes	−0.5	+0.1	−0.4	+1.2	−1.8	−0.3	−1.0	+2.0	+2.8	+1.8	±0.0	−0.6	+3.3
Upper Lakes	−0.8	+0.4	+0.3	−0.7	−0.8	+0.1	−0.4	−0.2	+1.3	+0.2	+1.5	−0.3	+0.6
North Dakota	−0.1	−0.2	−0.6	−1.6	−0.6	−1.8	−0.7	−0.8	+1.5	−0.2	±0.0	±0.0	−5.1
Upper Mississippi Valley	−0.4	−0.2	−0.4	−0.7	−1.6	−0.6	−0.1	+0.9	+5.0	+0.1	+1.1	−0.3	+2.8
Missouri Valley	+0.4	−0.2	−0.7	−1.7	−1.4	−1.8	−1.0	+0.4	+3.6	+0.7	+0.5	−0.1	−1.3
Northern slope	−0.2	−0.3	−0.6	−1.0	±0.0	±0.0	−0.1	+0.5	+0.3	−0.3	+0.3	−0.2	−1.6
Middle slope	+0.2	−0.3	+0.2	−0.6	−1.8	−0.8	+0.3	−1.0	+2.1	+0.3	−0.1	+0.5	−1.0
Southern slope	+0.2	−0.8	+1.2	+1.1	−0.8	+0.8	−0.1	−1.4	+0.2	+1.0	−0.3	+1.7	+2.8
Southern Plateau	−0.2	−0.5	+0.4	+0.8	+0.5	−0.2	−0.1	−0.3	+0.9	±0.0	+0.4	+1.3	+3.0
Middle Plateau	−0.4	+0.1	−0.6	+0.3	−0.3	−0.3	±0.0	−0.2	−0.4	−0.5	+0.5	+0.1	−1.7
Northern Plateau	−0.5	+0.4	−0.8	−0.6	−0.8	−0.2	−0.2	+0.9	+0.2	−0.1	+1.6	−0.1	−0.2
North Pacific	−1.4	+0.7	−3.1	−1.8	+1.1	−1.5	−0.5	+1.1	−0.8	+1.1	+0.7	−1.1	−5.5
Middle Pacific	+0.1	+1.6	−3.8	+1.4	−0.6	−0.4	±0.0	+0.2	−0.5	+0.3	+4.2	−1.8	+0.8
South Pacific	−0.8	+0.9	−2.3	+4.2	−0.5	−0.1	±0.0	±0.0	−0.2	−0.4	+2.5	−0.4	+2.9
UNITED STATES	+0.1	−0.1	−0.6	−0.2	−0.7	−0.6	−0.1	+0.4	+0.6	+0.3	+0.6	±0.0	−0.3

NOTES, ABSTRACTS, AND REVIEWS

C. G. ABBOT ON MONTEZUMA PYRHELIOMETRY[1]

Doctor Abbot has kindly consented to the advance publication by the Weather Bureau of the results of pyrheliometric observations made at Montezuma, Chile, from August 3, 1920, to April 30, 1926.

This advance publication is made in order that these important direct data of solar radiation may be available for study by meteorologists and other scientists at the earliest practicable moment. The 2½ pages of text recite simply the means that were taken to secure accuracy in the observations and the tabulation. The 12 pages of data are not discussed. This supplement, owing to the very technical character of the material presented, is not for general free distribution to the public, but copies may be had by students and others who wish to study the data on application to the Chief of the Weather Bureau.—*A. J. H.*

W. PEPPLER "ON THE INFLUENCE OF THE FOEHN WIND UPON THE AVERAGE TEMPERATURE IN THE ALPINE FORELAND"

551.55 (494)

In a note on this subject (Met. Zeit., October, 1926, p. 374) it is shown that at some distance from the Alps the foehn has already lost most of its effectiveness at the surface, but is still very important aloft. The diminishing effect at the surface with increasing distance from the Alps is shown by the considerably greater frequency of the foehn at Bregenz at the southeast end of Lake Constance, where the northward opening Rhine Valley forms the channel for an important flow of foehn winds, than at Friedrichshafen on the north shore of the lake, where well-marked foehns occur only five times a year at the most.

An analysis of 69 cable-balloon ascents at Friedrichshafen, made when anticyclonic, cold-air masses lay at the surface, showed with few exceptions the existence of a warm foehn wind aloft overriding the cold lower stratum. For 52 such occasions the mean departure of temperature from the normal at given elevations (above sea level) were as follows:

Below 400 m.	500 m.	1,000 m.	
2.3° C.	3.1°	5.1°	(max. departure).

Above 1,000 m. the departures declined to 2° at 3,000 m. (28 observations). This places the maximum departure at 600 m. above the surface of Lake Constance.

It is pointed out that this overrunning foehn should show an ameliorating effect on climate at elevations of some 600–800 m. in the Alpine foothills and even in the southern Black Forest; in this connection E. Wimmer is quoted as ascribing to the foehn the especially vigorous growth of the copper beech at these altitudes in the Feldberg area.

The importance of the Alps as a barrier to the southward escape of cold-air masses, and hence as a primary cause of the failure of the foehn to be felt at the lower elevations far north of the mountains, is emphasized. The consequence is that the cold-air masses exert a compensating influence which more than offsets the tendency of the foehn to raise the mean temperatures at low elevations.—*B. M. V.*

RETIREMENT OF DOCTOR DORNO

Dr. C. Dorno has sent word that on October 1, 1926, he resigned the directorship of the Physical-Meteorological Observatory at Davos. He founded the observatory and brought it to a position of unique eminence in its field.

His successor is Dr. F. Lindholm, who was long associated with the elder Ångström and who, previous to his present appointment, was State meteorologist in charge of the forecast division of the Swedish meteorological office.—*B. M. V.*

[1] Abbot, C. G., Montezuma Pyrheliometry, MONTHLY WEATHER REVIEW SUPPLEMENT No. 27, Washington, D. C., December, 1926.